

+

+

Substitute for form 1449A/PTO

(use as many sheets as necessary)

Sheet

1

of

2

Complete If Known

Application Number

09/631,463

Filing Date

August 3, 2000

First Named Inventor

Anthony C. Zuppero

Group Art Unit

Not Yet Known

Examiner Name

Not Yet Known

Attorney Docket Number

22122878-4412

U.S. PATENT DOCUMENTS

[illegible]

FOREIGN PATENT DOCUMENTS

[illegible]

**Examiner
Signature**

Kelly Stone

Date _____

Considered

6/16/04

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.**

Please type a plus sign (+) inside this box → ☐

PTO/SB/088 (10-96)
Approved for use through 10/31/99. OMB 0851-0031
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 2 of 2

Complete if Known

Application Number	09/631,463
Filing Date	August 3, 2000
First Named Inventor	Anthony C. Zuppero
Group Art Unit	Not Yet Known
Examiner Name	Not Yet Known
Attorney Docket Number	22122878-4412

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

Examiner Initials ¹	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
KS	1	FRESE, K. W., Jr. et al., "Hot electron reduction at etched n-Si/Pt thin film electrodes," Journal of the Electrochemical Society, Vol. 141, No. 9, September 1994, pp. 2402 - 2409.	
KS	2	MAHAN, G. D. et al., "Multilayer thermionic refrigerator and generator," Journal of Applied Physics, Vol. 83, No. 9, 1 May 1998.	
KS	3	STIPE, B. C. et al., "Atomistic studies of O2 dissociation on Pt(111) induced by photons, electrons, and by heating," J. of Chem. Phys., Vol. 107 (16), October 22, 1997, pp. 6443 - 6447.	
KS	4	TRIPA, C. E. et al., "Surface-aligned reaction of photogenerated oxygen atoms with carbon monoxide targets," Nature, Vol. 398, 15 April 1999, pp. 591 - 593.	

Examiner
Signature

Henry H. H.

Date
Considered

6/16/09

¹EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

+

+

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>				Complete if Known	
				Application Number	09/631,463
				Filing Date	8/3/2000
				First Named Inventor	Anthony C. Zuppero et al.
				Group Art Unit	Not Yet Known
				Examiner Name	Not Assigned
				Attorney Docket Number	22122878-4412
Sheet	1	of	1		

[illegible][illegible]

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.**

+



+

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>				Complete if Known	
				Application Number	09/631,463
				Filing Date	August 3, 2000
				First Named Inventor	Anthony C. Zuppero
				Group Art Unit	
				Examiner Name	
Sheet	1	of	3	Attorney Docket Number	22122878-4412

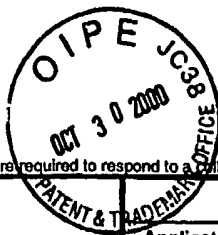
[illegible][illegible]

Examiner Signature	<i>Theresa Stone</i>	Date Considered	6/16/04
-----------------------	----------------------	--------------------	---------

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

+

Please type a plus sign (+) inside this box → ☐



Approved for use through 10/31/99. OMB 0651-0031
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

+

Substitute for form 1449B/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Application Number	09/631,463
		Filing Date	August 3, 2000
		First Named Inventor	Anthony C. Zupperto
		Group Art Unit	
		Examiner Name	
Sheet	2	of	3
		Attorney Docket Number	22122878-4412

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
Examiner Initials ¹	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
KS	1	BONN, M. et al., "Phonon-Versus Electron-Mediated Desorption and Oxidation of CO on Ru(0001)," Science, Vol. 285, No. 5430, Issue of 13 August 1999, pp. 1042-1045.	
	2	DAVIS, J. E. et al., "Kinetics and dynamics of the dissociative chemisorption of oxygen on Ir(111)," J. Chem. Phys., 107 No. 3, 15 July 1997, pp. 943-951.	
	3	GADZUK, J. W., "Hot-electron femtochemistry at surfaces: on the role of multiple electron processes in desorption," Chemical Physics, Vol. 251, year 2000, pp. 87-97.	
	4	GADZUK, J. W., "Resonance-assisted hot electron femtochemistry at surfaces," Physical Review Letters, May 27, 1996, Vol. 76, Issue 22, pp. 4234-4237.	
	5	GE, N.-H. et al., "Femtosecond Dynamics of Electron Localization at Interfaces," Science, Vol. 279, No. 5348, Issue of 9 Jan 1998, pp. 202-205.	
	6	GAO, Shiwu, "Quantum kinetic theory of vibrational heating and bond breaking by hot electrons," Physical Review B, Vol. 55, No. 3, 15 Jan 1997-I, pp. 1876-1886.	
	7	HOU, H. et al., "Enhanced Reactivity of Highly Vibrationally Excited Molecules on Metal Surfaces," Science, Vol. 284, No. 5420, Issue of 4 Jun 1999, pp. 1647-1650.	
	8	NIENHAUS, H. et al., "Direct detection of electron hole pairs generated by chemical reactions on metal surfaces," Surface Science 445 (2000) pp. 335-342.	
	9	NIENHAUS, H. et al., "Selective H atom sensors using ultrathin Ag/Si Schottky diodes," Applied Physics Letters, June 28, 1999, Vol. 74, Issue 26, pp. 4046-4048.	
	10	GAILLARD, Frederic et al., "Hot electron generation in aqueous solution at oxide-covered tantalum electrodes. Reduction of methylpyridinium and electrogenerated chemiluminescence of Ru(bpy)3 ²⁺ ," Journal of Physical Chemistry B., Vol. 103, No. 4, January 28 1999, pp. 667-74.	
KS	11	ENGSTROM, Ulrika and RYBERG, Roger, "Comparing the vibrational properties of low-energy modes of a molecular and an atomic adsorbate: CO and O on Pt (111)," Journal Of Chemical Physics, Vol. 112, No. 4, 22 January 2000, pp. 1959-1965.	

Examiner Signature	<i>Kelly Lane</i>	Date Considered	6/16/09
--------------------	-------------------	-----------------	---------

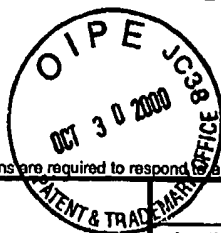
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

+

Please type a plus sign (+) inside this box → ☐



Approved for use through 10/31/99. OMB 0651-0031
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 3 of 3

Complete if Known

Application Number	09/631,463
Filing Date	August 3, 2000
First Named Inventor	Anthony C. Zuppero
Group Art Unit	
Examiner Name	
Attorney Docket Number	22122878-4412

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

Examiner Initials	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
KS	12	NOLAN, P. D. et al., "Molecularly chemisorbed intermediates to oxygen adsorption on Pt (111): A molecular beam and electron energy-loss spectroscopy study," Journal Of Chemical Physics, Vol. 111, No. 8, 22 August 1999.	
	13	NOLAN P. D. et al., " Direct verification of a high-translational-energy molecular precursor to oxygen dissociation on Pd(111)," Surface Science Vol. 419, pp. L107-L113, December 24, 1998.	
	14	OTTO, Andreas et al., "Role of atomic scale roughness in hot electron chemistry," Journal of Physical Chemistry B, Vol. 103, No. 14, April 8, 1999, pp. 2696-2701.	
	15	PLIHAL, M. et al., "Role of intra-adsorbate Coulomb correlations in energy transfer at metal surfaces," Physical Review B, Vol. 58, No. 4, July 15, 1998, pp. 2191-2206.	
	16	SUNG, Yung-Eun et al., "Enhancement of electrochemical hot electron injection into electrolyte solutions at oxide-covered tantalum electrodes by thin platinum films," Journal of Physical Chemistry B., Vol. 102, No. 49, December 3 1998, pp. 9806-11.	
	17	ZHDANOV, V. P. et al., "Substrate-mediated photoinduced chemical reactions on ultrathin metal films," Surface Science, Vol. 432 (#3), pp. L599-L603, July 20, 1999.	
	18	NIENHAUS, H., "Electron-hole pair creation by reactions at metal surfaces," American Physical Society, Centennial Meeting Program, March 20-26, 1999, Atlanta, GA, Session SC33 - Metal Surfaces: Adsorbates. http://www.aps.org/meet/CENT99/BAPS/	
KS	19	NIENHAUS, H et al., "Electron-Hole Pair Creation at Ag and Cu Surfaces by Adsorption of Atomic Hydrogen and Deuterium," Physical Review Letters, Vol. 82, Issue 2, January 11, 1999, pp. 446-449.	

Examiner Signature	<i>July 16/04</i>	Date Considered	6/16/04
--------------------	-------------------	-----------------	---------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

+

+

A circular black ink stamp from the Office of Intellectual Property (OIPE). The text "OIPE" is at the top, "JCI" is on the right, and "PATENT & TRADEMARK" is at the bottom. The date "MAR 22 2001" is stamped in the center.

Complete if Known

Application Number	09/631,463
Filing Date	8/3/2000
First Named Inventor	ANTHONY C. ZUPPERO
Group Art Unit	Not Yet Known
Examiner Name	Not Yet Known
Attorney Docket Number	22122878-4412

(use as many sheets as necessary)

Sheet	1	of	2	Attorney Docket Number	22122878-4412
-------	---	----	---	------------------------	---------------

[illegible][illegible]

Key stone

6/16/09

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.**

+

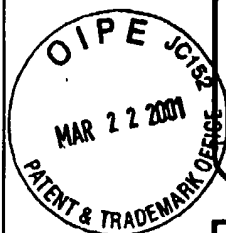
Substitute for form 1449B/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet	2	of	2
-------	---	----	---

Application Number	09/631,463
Filing Date	8/3/2000
First Named Inventor	ANTHONY C. ZUPPERO
Group Art Unit	Not Yet Known
Examiner Name	Not Yet Known
Attorney Docket Number	22122878-4412

[illegible]

Kley Hon

6/16/04

¹ Unique citation designation number. ² Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.**

+

Please type a plus sign (+) inside this box →

☒ DISPE
 no persons are required
 JUN 06 2001
 DISCLOSURE
 APR 6 7 30 AM '01

PTO/SB/08A (10-96)
Approved for use through 10/31/99. OMB 0651-0031
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Collection of information unless it contains a valid OMB control number.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet

1

of

2

Application Number

09/631,463

Filing Date

8/3/2000

First Named Inventor

ANTHONY C. ZUPPERO

Group Art Unit

Examiner Name

Attorney Docket Number

22122878-4412

U.S. PATENT DOCUMENTS

[illegible]

FOREIGN PATENT DOCUMENTS

[illegible]

**Examiner
Signature**

Wiley Stone

Date Considered

6/16/04

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO:** Assistant Commissioner for Patents, Washington, DC 20231.

